

# Appendix C: Mitigation Measures Common to All Action Alternatives

The National Park Service places a strong emphasis on avoidance, minimization, and mitigation of potential impacts. To help ensure that construction and/or operation of the proposed action protects natural and cultural resources and the quality of the visitor experience, protective measures would be developed and implemented consistent with the guiding principles and commitments outlined in the *Merced Wild and Scenic River Comprehensive Management Plan* and the *Yosemite Valley Plan*. The National Park Service would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results. No mitigation measures are proposed for Alternative 1.

The following protective measures would be developed and implemented, as appropriate, prior to, during, and/or after construction.

## Best Management Practices During Construction

The following Best Management Practices would be implemented, as appropriate, prior to, during, and/or after specific construction. Specific tasks would include, but not be limited to, the following:

- Prior to entry into the park, steam-clean heavy equipment to prevent importation of non-native plant species, tighten hydraulic fittings, ensure hydraulic hoses are in good condition and replace if damaged, and repair all petroleum leaks.
- Inspect the project to ensure that impacts stay within the parameters of the project area and do not escalate beyond the scope of the environmental assessment, as well as to ensure that the project conforms with all applicable permits or project conditions. Store all construction equipment within the delineated work limits. Confine work areas within creek channels to the smallest area necessary.
- Implement compliance monitoring to ensure that the project remains within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, U.S. Army Corps of Engineers Section 404 permits, etc.
- Provide a project orientation for all construction workers to increase their understanding and sensitivity to the challenges of the special environment in which they will be working.
- If deemed necessary, demolition/construction work on weekends or federal government holidays may be authorized, with prior written approval of the Superintendent.
- Remove all tools, equipment, barricades, signs, surplus materials, and rubbish from the project work limits upon project completion. Repair any asphalt surfaces that are damaged due to work on the project to original condition. Remove all debris from the project site, including all visible concrete, timber, and metal pieces.

## Biological Resource Protection Measures

### ***Revegetation Measures***

Revegetation measures would be developed and implemented to help ensure that disturbed areas are restored. These measures include the following:

- Implement the *Comprehensive Landscape and Revegetation Plan for Yosemite Lodge*, a revegetation plan that conforms to the requirements outlined in the park's *Vegetation Management Plan* (NPS 1997f) and Executive Order 13122 – Invasive Species. Specific components of the plan would include, but not be limited to, the following:
  - Soil salvage/reuse
  - Plant salvage
  - Soil preparation
  - Selection, use, and treatment of new soil
  - Use of native plants of native genotypes
  - Seeding mixtures/sources
  - Use of fertilizers
  - Noxious and invasive weed control
  - Supplemental revegetation if initial revegetation fails
  - Repair/replacement of damaged trees
  - Mulching

### ***Vegetation***

Mitigation actions would occur prior to, during, and/or after construction to largely offset immediate and long-term impacts to vegetation. Mitigation would include the following:

- Implement a noxious weed abatement program. Standard measures include the following elements: ensure construction-related equipment arrives on site free of mud or seed-bearing material, certify all seeds and straw material as weed-free, identify and treat areas of noxious weeds prior to construction, and revegetate with appropriate native species and monitor the restored site annually for three years to ensure absence of noxious weeds, successful revegetation, plant maintenance, and replacement of unsuccessful plant materials.
- During design, site buildings, bridges, and trails to minimize impacts to vegetation. Avoid large trees and hardwood and riparian species, where possible. Primary priority will be placed on protecting oak species, and secondary priority on protecting pine species. Retain native trees with a diameter of 20 inches or greater at breast height throughout the site to the extent feasible.
- Select base course and fill materials for compatibility with native granitic soils to minimize risk of introducing non-native plant seeds. All imported fill must be from a park-approved source.
- Install temporary barriers to protect natural surroundings (including trees, plants, and root zones) from damage. Avoid fastening ropes, cables, or fences to trees.
- Install fencing to minimize use of highly sensitive sites such as creek edges and wetlands, and install signs as needed to direct use to more appropriate areas.
- Use native seed mix or seed-free mulch to minimize surface erosion and the introduction of non-native plants.

- In site design, define trails and boundaries of development to confine human use and reduce radiating impacts.
- Comply with the *Vegetation Management Plan* for yard care within and around developed areas, including minimizing irrigation systems and planting native species appropriate to the site.

### **Special-Status Plant Species**

- A qualified botanist will conduct surveys of the Yosemite Lodge Area Redevelopment site during the appropriate time of year prior to construction to determine whether special-status plant species would be affected by the proposed action.
- If special-status plant species are identified within the construction disturbance zone, in particular within restoration and revegetation areas, avoid special-status plant populations to the extent feasible during construction activities.
- If it is not feasible for construction activities to avoid special-status plant species, species conservation measures will be developed in coordination with Yosemite National Park natural resources staff. Measures may include salvage of special-status plants for use in revegetating disturbed areas and transplantation of special-status plants wherever possible using methods and monitoring identified in the revegetation plan, monitoring to ensure successful revegetation, protection of plantings, and replacement of unsuccessful plant materials if practicable.

### **Wetlands**

The following measures would largely offset potential impacts to identified wetlands in the project area:

- Site all facilities to avoid wetlands or comply with Executive Order 11990 (Protection of Wetlands), the Clean Water Act, and Director's Order 77-1 (Wetland Protection).
- Store equipment and materials away from all waterways. No debris shall be deposited within 20 meters of Yosemite Creek or within the River Protection Overlay of the Merced River.
- Provide proper and timely maintenance for vehicles and equipment used during construction to reduce the potential for mechanical breakdowns. Conduct maintenance and fueling in an area at least 20 meters away from Yosemite Creek and outside of the River Protection Overlay for the Merced River.
- Complete work activities in wetlands during periods of low flow.
- Obtain full compliance with all permit conditions contained in the Section 404 Clean Water Act permit from the U.S. Army Corps of Engineers and Section 401 water quality certification or waiver from the Regional Water Quality Control Board.
- Use silt fencing at the Merced River, Yosemite Creek, and drainages to prevent construction materials from escaping work areas.
- Make every effort to avoid adversely affecting wetlands during construction activities to the extent feasible. Use fencing to protect wetlands from damage caused by construction equipment, erosion, siltation, and other ground-disturbing activities.
- To compensate for loss or alteration of wetlands, restore wetland habitat within the restoration area identified for this action in an area suitable for wetland restoration at a minimum ratio of 1:1 as part of the restoration program included in Phase 3 of project development. Wetland compensation will include monitoring to ensure successful revegetation, maintenance of plantings, and replacement of unsuccessful plant materials.

## Wildlife

Wildlife protection measures would be developed and implemented to minimize disturbances to wildlife and wildlife habitat that include the following:

- Conduct surveys of the project area to determine the type and number of vulnerable species that may be affected by construction activities and schedule construction activities by taking into consideration seasonal concerns and wildlife lifecycles to minimize effects to wildlife (i.e., after bird nesting seasons, when bats are neither hibernating nor have young, etc).
- Develop and implement a black bear protection plan for the Camp 4 expansion that includes, but is not limited to, identification of uses and maintenance procedures for the cooking pavilion and gear lockers, development of food enforcement measures, provision of food and waste removal and facility cleaning procedures, and establishment of performance standards setting thresholds for human/bear interactions. The plan would be developed in coordination with the Bear Management Council. If the National Park Service is not able to avoid adverse human/bear interactions at the proposed cooking pavilion through the black bear protection plan, the National Park Service would change management of the pavilion such that use of the pavilion would be restricted to picnicking only and cooking would be done at individual Camp 4 campsites.
- Limit the effects of light and noise on adjacent habitat through controls on construction equipment and through site design of facilities.
- Provide adequate education and enforcement to limit visitor and construction worker activities that are destructive to wildlife and habitats.
- Preserve, where possible, natural features with obvious high value to wildlife, such as tree snags.
- Maintain routes of escape from excavated pits and trenches for animals that might fall in. Cover post holes and other narrow pits with boards. During construction, maintain vigilance for animals caught in excavations and contact the National Park Service Wildlife Office to free them.
- Prior to tree management activities, qualified biologists would screen the area for bat roosts, nesting birds, snags, and other features that are important wildlife habitat.

## Special-Status Wildlife Species

The U.S. Fish and Wildlife Service is responsible for administering conservation and recovery measures to protect federally listed species, as directed in the Endangered Species Act of 1973. The U.S. Fish and Wildlife Service has prescribed conservation measures specific to the *Final Yosemite Valley Plan/Supplemental Environmental Impact Statement* (see Vol. II, Appendix L) as part of its Biological Opinion. The Biological Opinion contains terms and conditions that are nondiscretionary. In addition, the National Park Service has developed mitigation measures for all special-status species. These mitigation measures can be found in the Biological Assessment completed for the *Yosemite Valley Plan* (see Vol. II, Appendices K and L). In addition, the following measure would be applied to largely offset potential impacts to special-status wildlife species:

### Special-Status Species of Birds

- The Yosemite Lodge Area Redevelopment Site provides nesting habitat for special-status species of birds. Whenever feasible, perform construction-related activities outside the breeding season (typically from March to August). If construction activities are expected to take place during the breeding season, a qualified biologist will conduct preconstruction

surveys for individuals no more than two weeks prior to construction in March through August. If any special-status species is observed nesting, a determination will be made as to whether or not the proposed action would affect the active nest or disrupt reproductive behavior. If it is determined that the action would not affect an active nest or disrupt breeding behavior, work will proceed without any restriction or mitigation measure. If it is determined that construction activities would affect an active nest or disrupt reproductive behavior, then avoidance strategies will be implemented. Project activities could be delayed until a qualified biologist determines that the subject birds are not nesting or until any juvenile birds are no longer using the nest as their primary day and night roost.

#### ***Special-Status Species of Bats***

- A qualified bat biologist will conduct surveys prior to construction to evaluate whether trees or other habitat (e.g., crevices, buildings) that would be affected by the proposed action provide hibernacula or nursery colony roosting habitat for bat species.
- Building demolition and tree and snag removal would occur primarily during the period when neither maternity nor hibernation colonies are likely (generally April through May and August through October). If demolition and/or tree removal are slated to occur between November and March or between June and July, a qualified bat biologist will survey buildings to be demolished, trees and snags to be removed, and other potential habitat for breeding or hibernating bats prior to any building demolition and/or tree and snag removal activities.
- If bats are detected during reproduction or hibernation periods, demolition or tree/snag removal and disturbance of other potential habitat would be delayed until the bats can be excluded from the structure in a manner that does not adversely affect their survival or that of their young.
- If surveys conducted immediately prior to construction do not reveal any bat species present within the project area, then the action will begin within three days to prevent the destruction of any bats that could move into the area after the survey.
- Snags will not be removed without prior approval from the National Park Service.

#### ***Special-Status Species of Invertebrates***

- A qualified biologist will conduct surveys during the appropriate time of year prior to construction to determine whether rockslides, talus, riparian, or meadow habitats that would be affected by the proposed action provide habitat for special-status species of invertebrates.
- If surveys reveal the presence of special-status species of invertebrates in the vicinity of the proposed action, species conservation measures will be developed in coordination with Yosemite natural resources staff. Measures may include avoidance of occupied habitat and the implementation of dust abatement measures during construction adjacent to occupied habitat.

## **Compliance with Federal and State Permit Requirements**

The National Park Service and/or its contractors would apply for and comply with all federal and state permits required for construction-related activities that would include, but not be limited to:

- U.S. Army Corps of Engineers permits for activities affecting wetlands and the Merced River
- A technically conditioned certification issued by the California Regional Water Quality Control Board for monitoring construction-related activities affecting the Merced River
- U.S. Fish and Wildlife Service permits for activities affecting species protected by the Endangered Species Act

## Cultural Resources Protection Measures

Mitigation in this document is based on the 1999 Programmatic Agreement and includes the avoidance of adverse effects or the application of one or more standard mitigation measures, as described in Stipulations VII (C) and VIII of the Programmatic Agreement. Avoidance strategies may include the application of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (U.S. Department of the Interior 1983), design methods such as vegetation screening when placing new facilities in a historic district, and the development of guidelines to ensure compatibility between new and existing facilities. Stipulation VIII of the Programmatic Agreement requires the National Park Service to notify the State Historic Preservation Officer, American Indian tribes, and certain members of the public of its decision to implement standard mitigation measures, as described in Stipulation VIII (A) for individual actions that have an adverse effect on historic properties.

For archeological resources, mitigation includes avoidance of sites through project design, or recovery of information that makes sites eligible for inclusion on the National Register of Historic Places. According to Stipulation VII (C) of the Programmatic Agreement, impacts to archeological resources are not considered adverse for purposes of Section 106 of the National Historic Preservation Act if data recovery is carried out in accordance with the *Archeological Synthesis and Research Design* (Hull and Moratto 1999).<sup>1</sup>

The National Park Service would continue to consult with culturally associated American Indian tribes according to stipulations of the Programmatic Agreement, as well as specific agreements such as the October 17, 1997 “Agreement Between the National Park Service, Yosemite National Park, and the American Indian Council of Mariposa County, Inc. for Conducting Traditional Activities,” to develop appropriate strategies to mitigate impacts on American Indian traditional resources.

Mitigation measures for cultural landscape resources include measures to avoid impacts, designing new development to be compatible with surrounding historic resources, and screening new development from surrounding historic resources. Standard mitigation measures, as defined in the Programmatic Agreement, include documentation according to standards of the Historic American Buildings Survey/Historic American Engineering Record as defined in the Re-Engineering Proposal (October 1, 1997). The level of this documentation, which includes photography and a narrative history, would depend on the significance of a resource (national, state, or local) and the nature of the resource (an individually significant structure, contributing elements in a cultural landscape or historic district, etc.).

The project would strive to avoid intact deposits through careful project design. If intact deposits cannot be avoided, all data recovery to retrieve important information would be conducted in accordance with the Programmatic Agreement. Where previously unknown American Indian burials and archeological sites are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act and its implementing regulations would also be followed.

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<sup>1</sup> Under the Advisory Council on Historic Preservation's revised regulations of June 17, 1999 (36 CFR 800, Protection of Historic Properties; Final Rule and Notice), data recovery is considered to be an adverse effect. However, according to Part 800.3 (A)(2) of these regulations, provisions of programmatic agreements in existence at the effective date of the new regulations remain in effect.

Through existing agreements and ongoing consultation with culturally associated American Indian tribes, access to and use of special resources in Yosemite Valley would continue. To reduce potential impacts to American Indian traditional resources sites, designs would be developed to prevent visitors from wandering off designated trails.

Additional measures to largely offset potential impacts to cultural resources are listed below.

- A qualified archeologist, as directed by the Secretary of the Interior and National Park Service standards, will monitor construction activities, especially those that have a potential to affect cultural features.
- If additional, previously unknown cultural resources are encountered during construction, temporarily suspend work in the immediate area to document discovered resources according to National Park Service standards.
- Continue to consult with culturally associated American Indian tribes throughout the site-specific design process and project implementation to avoid or mitigate damage to American Indian traditional resources.
- Mitigate impacts to American Indian traditional resources through actions developed in consultation with culturally associated American Indian tribes (i.e., continuing to provide access to traditional and spiritual locations and, where appropriate, screening new development from traditional use areas).
- Precede removal of trees and vegetation to maintain the view corridors by site-specific reconnaissance for cultural resources to avoid potential impacts to those resources.
- Do not locate interim bus parking adjacent to the Indian Cultural Center when it is constructed.
- In order to discourage visitor trampling of American Indian traditional resources, place barriers and signs along the trails, in the restoration areas, and around the Indian Cultural Center.
- Protect known human burials from disturbance, and prepare emergency discovery plans to deal with any unanticipated discoveries.
- Design all new construction within historic districts or adjacent to historic sites to be compatible in terms of architectural elements, scale, massing, materials, and orientation.
- Undertake all treatments within cultural landscapes in keeping with the *Secretary of The Interior's Standards for the Treatment of Historic Properties*.

## Dust Abatement Measures

Dust abatement measures would be developed and implemented that include the following:

- Cover and/or seal truck beds and stockpiles to minimize blowing dust or loss of debris
- Limit truck and related construction equipment speeds in active construction areas to a maximum of 15 miles per hour and strictly adhering to park regulations and posted speed limits in other areas while inside park boundaries
- Maintain adequate dust suppression equipment and using clean water to control excess airborne particulates at staging areas, active construction zones, and unpaved roads leading to/from active construction areas

## Emergency Notification Measures

Emergency notification measures would be developed and implemented to help ensure that adequate and timely emergency notifications are issued that include the following:

- Develop an emergency notification plan that complies with park, federal, and state requirements and allows contractors to properly notify park, federal, and/or state personnel in the event of an emergency during construction activities. This plan will address notification requirements related to fire, personnel, and/or visitor injury, releases of spilled material, evacuation processes, etc. The emergency notification plan will be submitted to the park for review/approval prior to commencement of construction activities.
- Notify utilities prior to construction activities. Identify locations of existing utilities prior to removal activity to prevent damage to utilities. The Underground Services Alert and National Park Service maintenance staff will be informed 72 hours prior to any ground disturbance. Construction-related activities will not proceed until the process of locating existing utilities is completed (water, wastewater, electric, communications, and telephone lines). An emergency response plan will be required of the contractor.

## Erosion Control Measures

The following mitigation efforts would focus on erosion control:

- Use approved siltation and sediment control devices in construction areas to reduce erosion and surface scouring.
- Use approved siltation and sediment control devices appropriate to the situation in grading areas to capture eroding soil before discharge to riparian channels.
- Use water bars in temporary access roads to control and reduce surface scouring.
- Conserve and salvage topsoil for reuse. Materials will be reused to the maximum extent possible.

## Hazardous Materials Measures

- Store and use all hazardous materials in compliance with federal regulations. All applicable Materials Safety Data Sheets will be kept on site for inspection.
- Prior to initiation of any construction-related activities, conduct a reconnaissance of areas with the potential for underground storage tanks (i.e., the site of the former gas station near the current Yosemite Lodge kitchen loading dock and the existing Camp 4 restroom) for above-ground evidence of storage tank appurtenances (e.g., vents and piping). If no above-ground evidence is found during the reconnaissance, it would be followed by a focused magnetometer and ground-penetrating radar survey to determine whether any underground storage tanks remain in these areas. If an underground storage tank is identified in this reconnaissance effort or during project excavation or grading, work will be stopped. The Regional Water Quality Control Board will be notified, the tank removed, and the site remediated in compliance with current regulatory requirements and standards. Site remediation, if necessary, will be completed with oversight by the Regional Water Quality Control Board.
- Comply with all applicable regulations and policies during the removal and remediation of asbestos, lead paint, and polychlorinated biphenyls.



## Noise Abatement Measures

Noise abatement measures would be developed and implemented that include the following:

- Ensure that all construction equipment has functional exhaust/muffler systems
- Submit a construction work plan/schedule that minimizes construction-related noise in noise-sensitive areas to the park for review/approval prior to commencement of construction activities
- Use hydraulically or electrically powered construction equipment, when feasible
- Locate stationary noise sources as far from sensitive receptors as possible
- Limit the idling of motors except as necessary (e.g., concrete mixing trucks)
- To the extent possible, perform all on-site noisy work above 76 A-weighted decibels (dBA) (such as the operation of heavy equipment) between the hours of 8:30 a.m. and 5:00 p.m. to minimize disruption to nearby park users

## Scenic Resources Protection Measures

Mitigation measures for scenic resources would be designed to minimize visual intrusions associated with construction- and development-related activities and include the following:

- Fence construction staging areas and construction activity areas to visually screen construction activity and materials
- Consolidate construction equipment and materials to the staging areas at the end of each work day to limit the visual intrusion of construction equipment during nonwork hours

## Spill Prevention/Response Measures

Spill prevention/response measures would be developed and implemented that include the following:

- Develop and implement a comprehensive spill prevention/response plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements. The spill prevention/response plan will be submitted to the park for review/approval prior to commencement of construction activities.
- To minimize the possibility of hazardous materials seeping into soil or water, check equipment frequently to identify and repair any leaks. Standard measures include hazardous materials storage and handling procedures; spill containment, cleanup, and reporting procedures; and limitation of refueling and other hazardous activities to upland/nonsensitive sites. Provide an adequate hydrocarbon spill containment system (e.g., absorption materials, etc.) on site, in case of unexpected spills in the project area. Ensure equipment is equipped with a hazardous spill containment kit. Ensure that personnel trained in the use of hazardous spill containment kits are on site at all times during construction activities.

## Stormwater Pollution Prevention Measures

Stormwater pollution prevention measures would be developed and implemented that include the following:

- Develop and implement a comprehensive stormwater pollution prevention plan for construction activities that complies with federal and state regulations and addresses all aspects of stormwater pollution prevention. The stormwater pollution prevention plan will be submitted to the park for review/approval prior to construction activities.

The stormwater pollution prevention plan would include such measures as, but is not limited to the following:

- Take measures to control erosion, sedimentation, and compaction, and thereby reduce water pollution and adverse water quality effects on the Merced River and Yosemite Creek. Use silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- To the extent possible, schedule the use of mechanical equipment during periods of low precipitation to reduce the risk of accidental hydrocarbon leaks or spills. When mechanical equipment is necessary outside of low precipitation periods, use National Park Service–approved methods to protect soil and water from contaminants.
- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks prior to use on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- Keep absorbent pads, booms, and other materials on site during projects that use heavy equipment to contain oil, hydraulic fluid, solvents, and hazardous material spills.

## Traffic Control and Visitor Protection Measures

Traffic control and visitor protection measures would be developed and implemented by contractors that include the following:

- Develop and implement a comprehensive traffic control and visitor protection plan for park review/approval that:
  - Complies with necessary U.S. Department of Transportation, Federal Highway Administration Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI-Traffic Control for Construction and Maintenance Operations, and California Department of Transportation Standard Specifications, Section 12
  - Provides procedures for preparing and submitting specific street closure, traffic control, and detour plans for each specific area of project construction not less than three weeks before commencement of construction activities in each area
  - Provides procedures for managing staging areas to restrict public access and maintain site safety
  - Ensures that visitors are safely and efficiently routed around construction areas in the Valley
  - Outlines measures to largely offset the potential for public exposure to noxious materials or contaminants that may be present during construction in the project area (i.e., by

- providing established and maintained walkways and bridges across the site, covering walking paths with clean soil and asphalt, and providing barrier fencing along trails)
- Provide protective fencing enclosures around construction areas, including utility trenches, to protect public health and safety

## Transportation Measures

The following transportation mitigation measures would be implemented:

- Install appropriate traffic signs
- Provide a warning sign to alert drivers of Northside Drive realignment
- Avoid interrupting traffic on Northside Drive and Southside Drive at the same time to limit undue congestion and adverse visitor experiences
- Locate construction worker parking outside of Yosemite Valley, with the exception of key supervisory personnel (approximately four to seven individuals)
- Transport construction personnel into and out of Yosemite Valley during Phases 1 and 2 approximately 7 to 10 shuttle vans

## Utility Measures

The following mitigation measures would be implemented to largely offset potential impacts to park utilities:

- Verify utility locations by contacting the Underground Services Alert prior to the start of construction
- Observe California Department of Health Services standards in designing utility systems
- Promptly reconnect utility services that are interrupted because of construction activities and provide advance notification to all residents, concessioners, and others if utility service will be disrupted

## Visitor Experience Measures

Visitor experience measures would be developed and implemented that include the following:

- Develop and implement a visitor outreach and communication plan that addresses means for effectively communicating Valley construction and road, trail, recreation uses, and other visitor facility closure, relocation, and detour schedules to the public
- Schedule construction activities that would interrupt operations at visitor serving, orientation, and interpretation facilities (food service, retail, tour/activity desk, information kiosk, and interpretive programming) during lower visitor-use periods (late fall and winter), to the extent possible
- Temporarily relocate interpretive services provided at the amphitheater while the existing amphitheater is unavailable for use, the information board at Camp 4, and the Valley tram tour pick up location to nearby locations during construction activities that interrupt use

## ***Night Sky Measures***

Measures would be implemented to minimize effects of night lighting on the ability to view the night sky in the Valley that include the following:

- To the extent possible, schedule necessary 24-hour construction activities in the immediate vicinity of campgrounds and lodging units such that they occur during periods when those areas are closed or not in use
- Direct and shield night lighting associated with construction equipment to minimize light scatter effects
- Design interior and exterior lighting to prevent escaped light
- Use more intense and uniform light to promote security where human activity is high, and use lower light levels to provide wayfinding within developed areas, as needed
- Provide lights in developed areas for safety where pedestrians cross busy intersections
- Use low-height, lighted bollards in parking areas in lieu of overhead pole lighting
- Use downward-facing and unobtrusive luminaries at facilities and building entrances and exits

## **Waste Management Measures**

Waste management measures would be developed and implemented that include the following:

- Develop and implement a comprehensive waste management plan that complies with federal and state regulations and addresses all aspects related to the transportation, storage, and handling of construction-related hazardous and nonhazardous liquid and solid wastes and submit the plan to the park for review/approval prior to the commencement of construction activities
- Require construction personnel to adhere to park regulations concerning food storage and refuse management
- Provide bear-proof containers in the camping and picnic areas
- Provide adequate cleaning of areas and garbage pickup to limit wildlife access to human food
- Dispose of refuse at least weekly, and do not burn refuse inside the park